General

Guideline Title

Acromegaly: an Endocrine Society clinical practice guideline.

Bibliographic Source(s)

Katznelson L, Laws ER Jr, Melmed S, Molitch ME, Murad MH, Utz A, Wass JAH, Endocrine Society. Acromegaly: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2014 Nov;99(11):3933-51. [219 references] PubMed

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Recommendations

Major Recommendations

Definitions for the quality of the evidence (+OOO, ++OO, +++O, and ++++); the strength of the recommendation (1 or 2); and the difference between a "recommendation" and a "suggestion" are provided at the end of the "Major Recommendations" field.

Diagnosis

The Task Force recommends measurement of insulin-like growth factor 1 (IGF-1) levels in patients with typical clinical manifestations of acromegaly, especially those with acral and facial features. (1|+++O)

The Task Force suggests the measurement of IGF-1 in patients without the typical manifestations of acromegaly, but who have several of these associated conditions: sleep apnea syndrome, type 2 diabetes mellitus, debilitating arthritis, carpal tunnel syndrome, hyperhidrosis, and hypertension. (2|++OO)

The Task Force recommends measuring serum IGF-1 to rule out acromegaly in a patient with a pituitary mass. (1|+++O)

The Task Force recommends against relying on the use of random growth hormone (GH) levels to diagnose acromegaly. (1|+++O)

In patients with elevated or equivocal serum IGF-1 levels, the Task Force recommends confirmation of the diagnosis by finding lack of suppression of GH to <1 μg/L following documented hyperglycemia during an oral glucose load. (1|+++O)

Following biochemical diagnosis of acromegaly, the Task Force recommends performing an imaging study to visualize tumor size and appearance, as well as parasellar extent (1|++++). The Task Force suggests magnetic resonance imaging (MRI) as the imaging modality of choice, followed by computed tomography (CT) scan when MRI is contraindicated or unavailable. (2|++OO)

The Task Force suggests performing formal visual field testing when the tumor is found to abut the optic chiasm on an imaging study. (2|+++O)

Presentation and Management of Comorbidities and Mortality Risk

The Task Force suggests evaluating all patients presenting with acromegaly for associated comorbidities, including hypertension, diabetes mellitus, cardiovascular disease, osteoarthritis, and sleep apnea. (2|++OO)

The Task Force also recommends that such comorbidities be longitudinally monitored and rigorously managed. (Ungraded recommendation)

The Task Force suggests screening for colon neoplasia with colonoscopy at diagnosis. (2|++OO)

The Task Force suggests a thyroid ultrasound if there is palpable thyroid nodularity. (2|++OO)

The Task Force recommends assessing for hypopituitarism and replacing hormone deficits. (1|+++O)

Goals of Management

The Task Force suggests a biochemical target goal of an age-normalized serum IGF-1 value, which signifies control of acromegaly. (2|++OO)

The Task Force suggests using a random GH <1.0 μg/L as a therapeutic goal, as this correlates with control of acromegaly. (2|+OOO)

The Task Force suggests maintaining the same GH and IGF-1 assay in the same patient throughout management. (2|++OO)

Surgery

Indications

The Task Force recommends transsphenoidal surgery as the primary therapy in most patients. (1|+++O)

The Task Force suggests that repeat surgery be considered in a patient with residual intrasellar disease following initial surgery. (2|++OO)

Preoperative Medical Therapy

The Task Force suggests against the routine use of preoperative medical therapy to improve biochemical control after surgery. (2|++OO)

For patients with severe pharyngeal thickness and sleep apnea, or high-output heart failure, the Task Force suggests medical therapy with somatostatin receptor ligands (SRLs) preoperatively to reduce surgical risk from severe comorbidities. (2|+OOO)

Surgical Debulking

In a patient with parasellar disease making total surgical resection unlikely, the Task Force suggests surgical debulking to improve subsequent response to medical therapy. (2|++OO)

Postoperative Testing

Following surgery, the Task Force suggests measuring an IGF-1 level and a random GH at 12 weeks or later (2|+++O). The Task Force suggest measuring a nadir GH level after a glucose load in a patient with a GH greater than 1 μg/L. (2|+++O)

The Task Force recommends performing an imaging study at least 12 weeks after surgery to visualize residual tumor and adjacent structures (1|+++O). The Task Force suggests MRI as the imaging modality of choice followed by CT scan when MRI is contraindicated or unavailable. (2|++OO)

Medical Therapy

The Task Force recommends medical therapy in a patient with persistent disease following surgery. (1|++++)

In a patient with significant disease (i.e., with moderate-to-severe signs and symptoms of GH excess and without local mass effects), the Task Force suggests use of either a SRL or pegvisomant as the initial adjuvant medical therapy. (2|++OO)

In a patient with only modest elevations of serum IGF-1 and mild signs and symptoms of GH excess, the Task Force suggests a trial of a dopamine agonist, usually cabergoline, as the initial adjuvant medical therapy. (2|++OO)

The Task Force suggests against routine abdominal ultrasound to monitor for gallstone disease in a patient receiving a SRL (2|++OO). Ultrasound should be performed if the patient has signs and symptoms of gallstone disease. (2|++OO)

The Task Force suggests serial imaging with MRI scan to evaluate tumor size in a patient receiving pegvisomant. (2|++OO)

The Task Force suggests monitoring liver function tests monthly for the first 6 months and then every 6 months in a patient receiving pegvisomant, with consideration of discontinuation of pegvisomant if the transaminases are greater than 3-fold elevated. (2|++OO)

The Task Force suggests addition of pegvisomant or cabergoline in a patient with inadequate response to an SRL. (2|++OO)

The Task Force suggests use of an SRL as primary therapy in a patient who cannot be cured by surgery, has extensive cavernous sinus invasion, does not have chiasmal compression, or is a poor surgical candidate. (2|+++O)

Radiotherapy (RT)/Stereotactic Radiotherapy (SRT)

The Task Force suggests use of RT in the setting of residual tumor mass following surgery, and if medical therapy is unavailable, unsuccessful, or not tolerated. (2|++OO)

The Task Force suggests use of SRT over conventional RT in patients with acromegaly, unless the technique is not available, there is significant residual tumor burden, or the tumor is too close to the optic chiasm resulting in an exposure of more than 8 Gy. (2|++OO)

To monitor the efficacy of RT, the Task Force recommends annual GH/IGF-1 reassessment following medication withdrawal. (1|+++O)

The Task Force recommends annual hormonal testing of patients following RT for hypopituitarism and other delayed radiation effects. (1|++++)

Special Circumstances

Gigantism

In patients with the rare presentation of gigantism, the Task Force recommends the standard approaches to normalizing GH and IGF-1 hypersecretion as described elsewhere in this guideline. (1|+++O)

Pregnancy

The Task Force suggests discontinuing long-acting SRL formulations and pegvisomant approximately 2 months before attempts to conceive, with use of short-acting octreotide as necessary until conception. (2|++OO)

During pregnancy, the Task Force recommends that acromegaly medical therapy be withheld and administered only for tumor and headache control. (1|++OO)

During pregnancy, the Task Force suggests serial visual field testing in patients with macroadenomas. (2|+++O)

The Task Force suggests against monitoring GH and/or IGF-1 levels during pregnancy. (2|+++O)

Definitions:

Quality of Evidence

+OOO Denotes very low quality evidence

++OO Denotes low quality evidence

+++O Denotes moderate quality evidence

++++ Denotes high quality evidence

Strength of Recommendation

1 - Indicates a strong recommendation and is associated with the phrase "The Task Force recommends."

2 - Denotes a weak recommendation and is associated with the phrase "The Task Force suggests."

Clinical Algorithm(s)

An algorithm titled "Management of Acromegaly" is provided in the original guideline document.

Scope

Disease/Condition(s)

Acromegaly

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Endocrinology

Neurological Surgery

Obstetrics and Gynecology

Radiation Oncology

Surgery

Intended Users

Advanced Practice Nurses

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To formulate clinical practice guidelines for acromegaly

Target Population

Adult patients with acromegaly

Interventions and Practices Considered

Diagnosis/Evaluation

1. Measurement of serum insulin-like growth factor 1 (IGF-1) levels
2. Confirmation of diagnosis by finding lack of suppression of growth hormone (GH) to <1 µg/L during an oral glucose load
3. Imaging studies to visualize tumor size using magnetic resonance imaging (MRI) or computed tomography (CT)
4. Visual field testing

5. Evaluation, monitoring, and management of associated comorbidities (hypertension, diabetes mellitus, cardiovascular disease, osteoarthritis and sleep apnea)
6. Screening for colon neoplasia with colonoscopy
7. Thyroid ultrasound, especially if there is palpable thyroid nodularity
8. Assessing for hypopituitarism and replacing hormone deficits

Treatment/Management

1. Establishment of biochemical target goals for serum IGF-1
2. Using a random GH <1.0 μg/L as a therapeutic goal
3. Maintaining the same GH and IGF-1 assay in the same patient throughout management
4. Transsphenoidal surgery
5. Use of somatostatin receptor ligands (SRLs) preoperatively to reduce surgical risk from severe comorbidities
6. Surgical debulking
7. Postoperative testing of IGF-1 and random GH
8. Postoperative imaging studies (MRI and CT scan)
9. Medical therapy
    - SRL or pegvisomant
    - Dopamine agonist (e.g., cabergoline)
10. Serial imaging with MRI scan to evaluate tumor size in patients receiving pegvisomant
11. Liver function monitoring in patients receiving pegvisomant
12. Radiation therapy (RT), preferably stereotactic radiotherapy (SRT)
13. Monitoring after RT, including annual GH/IGF-1 reassessment and hormone testing
14. Consideration of special circumstances (gigantism, pregnancy)

Note: The following interventions were considered but not recommended:

- Measurement of random GH levels to diagnose acromegaly
- Routine use of preoperative medical therapy to improve biochemical control after surgery
- Routine abdominal ultrasound to monitor for gallstone disease in patients receiving SRL

Major Outcomes Considered

- Biochemical remission
- Mean difference (change) between pre- and post-interventional insulin-like growth factor-1 (IGF-1) or growth hormone (GH) levels
- All-cause mortality
- Hypopituitarism
- Headaches
- Secondary malignancies

Methodology

Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The Task Force reviewed primary evidence and commissioned two additional systematic reviews (see the "Availability of Companion Documents" field) to support the guideline.

Surgical Interventions and Medical Treatments in Treatment-Naïve Patients with Acromegaly: Systematic Review and Meta-Analysis

Study Eligibility

Reviewers included original controlled and uncontrolled studies (prospective and retrospective) that enrolled patients with acromegaly and were recruited to receive either surgical treatment or medical treatment as their first-line treatment (treatment naïve). Medical treatment was restricted to somatostatin receptor ligands (SRLs; octreotide or lanreotide) and a transsphenoidal surgery approach. The follow-up period was defined as 3 months or longer.

Literature Search

A comprehensive literature search was conducted by an expert reference librarian with input from the study's principal investigator and Endocrine Society Task Force members. The search included Medline in-process and other non-indexed citations, Medline, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Scopus. A combination of controlled vocabulary and key words was used to search for patients with acromegaly who received any form of surgical treatment or medical treatments as shown in Table 5 in the systematic review document. The reviewers, working independently and in duplicate, identified original studies eligible for further review by screening abstracts and titles. If a study was deemed relevant, the manuscript was obtained and reviewed in full-text version for further assessment. Any inclusion or exclusion disagreements were discussed and reconciled by a third investigator. Previously described data sources, including citing articles and relevant systematic reviews, were searched manually for possible studies, and duplicates were excluded. The reviewers expanded the search to include all languages, with last date of inclusion to be April 2014. Non-English articles were translated and assessed with the help of native or efficient speakers of the corresponding language used in the article.

Radiotherapy vs. Radiosurgery in Treating Patients with Acromegaly: Systematic Review and Meta-Analysis

Study Eligibility

The reviewers included original controlled and uncontrolled studies (prospective and retrospective) that enrolled patients with acromegaly and were recruited to receive either stereotactic radiosurgery (SRS) or radiotherapy (RT). They searched for comparative studies and when not possible, they included single arms from studies that reported treatment-naïve interventions of interest. Radiosurgical techniques included mainly GammaKnife, LINAC, and Proton beam. RT included conventional, external beam, fractioned, and LINAC radiotherapy.

Literature Search

A comprehensive literature search was conducted by an expert reference librarian with input from the study's principal investigator and Endocrine Society task force members. The search included Medline In-Process & Other Non-Indexed Citations, MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Scopus. A combination of controlled vocabulary and keywords was used to search for patients with acromegaly who received any form of SRS (various forms of the procedure) or RT (in various forms as well). The reviewers, working independently and in duplicate, identified original studies eligible for further review by screening abstracts and titles. If a study was deemed relevant, the manuscript was obtained and reviewed in full-text version for further assessment. Any inclusion or exclusion disagreements were discussed and reconciled by a third investigator. Previously described data sources, including citing articles and relevant systematic reviews were searched manually for possible studies, and duplicates were excluded. The search was expanded to include all languages, with last date of inclusion to be April 2014.

Number of Source Documents

Surgical Interventions and Medical Treatments in Treatment-Naïve Patients with Acromegaly: Systematic Review and Meta-Analysis

The initial search resulted in 1022 citations. After abstract review, this was limited to 187 potentially relevant articles. The full-text review resulted in 35 eligible studies. See Figure 1 in the systematic review document (see the "Availability of Companion Documents" field) for a flow chart of the literature search yield and study selection.

Radiotherapy vs. Radiosurgery in Treating Patients with Acromegaly: Systematic Review and Meta-Analysis

The initial search resulted in 315 publications of which 85 were reviewed in full text. Eventually, 30 studies were deemed eligible. See Figure 1 in the systematic review document for a flow chart of the literature search and study selection.

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence

+OOO Denotes very low quality evidence

++OO Denotes low quality evidence

+++O Denotes moderate quality evidence

++++ Denotes high quality evidence

Methods Used to Analyze the Evidence

Meta-Analysis

Review of Published Meta-Analyses

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

The Task Force reviewed primary evidence and commissioned two additional systematic reviews (see the "Availability of Companion Documents" field) to support the guideline.

Surgical Interventions and Medical Treatments in Treatment-Naïve Patients with Acromegaly: Systematic Review and Meta-Analysis

Data Extraction

Two reviewers independently extracted data from each study. They extracted data on patient demographics, baseline characteristics, study design variables, sample size, levels of insulin-like growth factor 1 (IGF-1) and growth hormone (GH) pre- and post-therapy levels, and remission rate, when reported. In addition, for each study, reviewers extracted variables related to acromegaly in the relevant intervention group.

Risk of Bias Assessment

Because of the noncomparative nature of the available studies, the reviewers modified the Newcastle-Ottawa Scale by removing the comparability criteria that is not applicable for the research question. Quality assessment focused on cohort selection, outcome ascertainment, and attrition. The untreated arms of interventional studies were considered as case series for quality assessment purposes.

Outcomes

Outcomes of interest were biochemical remission (calculated as rates), mean difference (change) between pre- and post-interventional IGF-1 and GH levels, and all-cause mortality, when reported. Primary biochemical end points were defined by a strict cutoff criteria of normal serum IGF-1 levels adjusted to age and gender and serum GH less than 1 μg/L. For the subgroup analysis, the reviewers included studies that ascertained remission by IGF-1-only criterion, defined by normal serum levels adjusted to age and gender. They also included studies that ascertained remission by random GH less than 2.5 μg/L or GH nadir after an oral glucose tolerance test (OGTT) less than 1 μg/L. Total remission rates were calculated based on reporting of patients achieving remission based on at least one biochemical remission criterion (GH or IGF-1). Surgeon experience compared if all surgeries reported in the study were performed by the same surgeon (one surgeon experience) vs more than one surgeon. Tumor size was defined as microadenoma (<10 mm) and macroadenoma (>10 mm).

Statistical Analysis and Data Synthesis

For dichotomized outcomes, the reviewers calculated a cumulative incidence at a certain time point (event rate) and estimated the 95% confidence intervals (CI) using binomial distribution. They then pooled the log-transformed event rates using the DerSimonian and Laird random-effects models with the heterogeneity estimated from the Mantel-Haenszel model. For continuous outcomes, the reviewers calculated the weighted difference in means between the baseline and the longest duration of follow-up for each study. The effect size was pooled using the DerSimonian

and Laird random-effect models. The Altman and Bland test was used to compare the outcomes between medical and surgical interventions. The reviewers conducted subgroup analyses based on different remission criteria, the follow-up period, the surgeon's experience, and the type of adenoma tumor. To measure the overall heterogeneity across the included studies, they used I^2 statistic, in which I^2 greater than 50% suggests high heterogeneity. All statistical analyses were conducted using STATA version 12.1 (StataCorp LP).

Radiotherapy vs. Radiosurgery in Treating Patients with Acromegaly: Systematic Review and Meta-Analysis

Data Extraction

Two reviewers independently extracted data from each study. They extracted data on patient demographics, baseline characteristics, study design variables, sample size, levels of IGF and GH pre- and post-therapy levels, and remission rates, when reported. In addition, for each study, reviewers extracted variables related to acromegaly in the relevant intervention group.

Risk of Bias Assessment

Because of the non-comparative nature of the available studies, reviewers modified the Newcastle-Ottawa Scale by removing the comparability criteria which is not applicable for the research question. Quality assessment focused on cohort selection, outcome ascertainment and attrition. The untreated arms of interventional studies were considered as case series for quality assessment purposes.

Outcomes

Outcomes of interest were biochemical remission (calculated as rates), mean difference (change) between pre- and post-interventional IGF-1, and/or mean difference (change) between pre- and post-interventional GH levels, when possible. Biochemical remission was defined by a strict cutoff criteria of normal serum IGF-1 levels adjusted to age and gender and serum GH <1 μg /l. For subgroup analysis, reviewers included studies that ascertained remission by IGF-1-only criterion, defined by normal serum levels adjusted to age and gender. Reviewers also included studies that ascertained remission by random GH <2·5μg /l or GH nadir after an oral glucose tolerance test (OGTT) <1 μg /l. Hypopituitarism was defined as loss of ≥1 anterior pituitary gland axis (e.g., central hypothyroidism, hypoadrenalism, hypogonadism) as defined in the studies. Loss of any of these individual pituitary function axes were recorded as well. All-cause mortality, headaches and secondary malignancies were also extracted, when reported.

Statistical Analysis and Data Synthesis

For dichotomized outcomes, reviewers calculated a cumulative incidence at a certain time point (event rate) and estimated the 95% CI using binomial distribution. They then pooled the log transformed event rates using the DerSimonian and Laird random-effects models with the heterogeneity estimated from the Mantel-Haenszel model. For continuous outcomes, reviewers calculated effect size between the baseline and the longest duration of follow-up for each study. Effect size was pooled using the DerSimonian and Laird random-effect models. The Altman and Bland test was used to compare the outcomes between RT and SRS. Reviewers conducted subgroup analyses based on remission criteria, and the history of previous treatment in the RT group. To measure the overall heterogeneity across the included studies, they used I^2 statistic, where I^2 > 50% suggests high heterogeneity. All statistical analyses were conducted using STATA version 12.1 (StataCorp LP, College Station, Texas).

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Participants

The Task Force included a chair selected by the Endocrine Society Clinical Guidelines Subcommittee (CGS), five experts in the field, and a methodologist. The authors received no corporate funding or remuneration. This guideline is cosponsored by the European Society of Endocrinology.

Evidence

This evidence-based guideline was developed using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system to describe both the strength of recommendations and the quality of evidence. The Task Force reviewed primary evidence and commissioned two additional systematic reviews.

Consensus Process

One group meeting, several conference calls, and e-mail communications enabled consensus. Committees and members of the Endocrine Society and the European Society of Endocrinology reviewed drafts of the guidelines.

Rating Scheme for the Strength of the Recommendations

Strength of Recommendation

1 - Indicates a strong recommendation and is associated with the phrase "The Task Force recommends."

2 - Denotes a weak recommendation and is associated with the phrase "The Task Force suggests."

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Committees and members of the Endocrine Society and the European Society of Endocrinology reviewed drafts of the guidelines.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Safe and effective evaluation and management of acromegaly, including appropriate biochemical assessment
- Combining medical therapies may improve efficacy, reduce side effects associated with an individual medication, decrease the frequency of injections and total drug dose, and, potentially offer a cost benefit and improved compliance during long-term treatment.

Potential Harms

- Common side effects of somatostatin receptor ligands (SRLs) include abdominal cramps, flatulence, and diarrhea which usually abate with continued treatment. Side effects also include occasional local skin irritation and pain at the injection site. Less common are reversible hair loss and, rarely, alopecia. Because SRLs may inhibit both insulin and glucagon as well as growth hormone (GH) secretion, glucose control usually improves but rarely may worsen. In addition to side effects that are similar to those of octreotide and lanreotide, pasireotide is associated with hyperglycemia in 57% of subjects.
- With the use of pegvisomant, injection site reactions have been reported in 2.2% of patients and include local discomfort, reversible lipohypertrophy, or lipoatrophy.
- There is an increased risk of transient transaminase elevation, reported in 27% of subjects, with the combination of SRL and pegvisomant.

- Side effects of cabergoline include gastrointestinal upset, nasal congestion, fatigue, orthostasis, and headache. Cardiac valve abnormalities occur with high doses of cabergoline used for patients with Parkinson's disease but have not been observed in most studies of patients with prolactinomas treated with conventional doses (≤2.0 mg/wk). One study in 42 acromegalic patients treated with cabergoline for a median of 35 months showed no increased risk of progressive valvular abnormalities.
- Complications of conventional radiotherapy (RT) in patients with pituitary tumors include radiation-induced cranial nerve damage, secondary tumors, radionecrosis, and cognitive changes. Radionecrosis is a rare complication of gamma knife stereotactic radiotherapy (SRT). It has been suggested that SRLs may limit the effectiveness of RT, although this finding was based on nonrandomized and retrospective studies and has been refuted by subsequent studies. Accordingly, there is no basis for the practice of withholding SRLs at the time of RT.
- Complications from surgery include bleeding, spinal fluid leak, meningitis, sodium and water imbalance, and hypopituitarism. Major complications such as carotid artery injury and visual loss are rare. Because of hypertrophic upper airway structures, fiberoptic intubation may be necessary, and careful perioperative airway management is essential.
- False positives for a diagnosis of acromegaly may occur in pregnancy and late-stage adolescence.

Qualifying Statements

Qualifying Statements

- Clinical Practice Guidelines are developed to be of assistance to endocrinologists and other health care professionals by providing guidance and recommendations for particular areas of practice. The Guidelines should not be considered inclusive of all proper approaches or methods, or exclusive of others. The Guidelines cannot guarantee any specific outcome, nor do they establish a standard of care. The Guidelines are not intended to dictate the treatment of a particular patient. Treatment decisions must be made based on the independent judgment of health care providers and each patient's individual circumstances.
- The Endocrine Society makes no warranty, express or implied, regarding the Guidelines and specifically excludes any warranties of merchantability and fitness for a particular use or purpose. The Society shall not be liable for direct, indirect, special, incidental, or consequential damages related to the use of the information contained herein.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Clinical Algorithm

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Katznelson L, Laws ER Jr, Melmed S, Molitch ME, Murad MH, Utz A, Wass JAH, Endocrine Society. Acromegaly: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab. 2014 Nov;99(11):3933-51. [219 references] PubMed

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2014 Nov

Guideline Developer(s)

The Endocrine Society - Professional Association

Source(s) of Funding

Funding for this guideline was derived solely from the Endocrine Society, and thus the Task Force received no funding or remuneration from commercial or other entities.

Guideline Committee

The Acromegaly Guidelines Task Force

Composition of Group That Authored the Guideline

Task Force Members: Laurence Katznelson (*Chair*); Edward R. Laws, Jr; Shlomo Melmed; Mark E. Molitch; Mohammad Hassan Murad; Andrea Utz; John A. H. Wass

Financial Disclosures/Conflicts of Interest

The Endocrine Society maintains a rigorous conflict of interest review process for the development of clinical practice guidelines. All Task Force members must declare any potential conflicts of interest, which are reviewed before the members are approved to serve on the Task Force and periodically during the development of the guideline. The conflict-of-interest forms are vetted by the Clinical Guidelines Subcommittee (CGS) before the members are approved by the Society's Council to participate on the guideline Task Force. Participants in the guideline development must include a majority of individuals without conflict of interest in the matter under study. Participants with conflicts of interest may participate in the development of the guideline but they must have disclosed all conflicts. The CGS and the Task Force have reviewed all disclosures for this guideline and resolved or managed all identified conflicts of interest.

Conflicts of interest are defined by remuneration in any amount from the commercial interest(s) in the form of grants; research support; consulting fees; salary; ownership interest (e.g., stocks, stock options, or ownership interest excluding diversified mutual funds); honoraria or other payments for participation in speakers' bureaus, advisory boards, or boards of directors; or other financial benefits. Completed forms are available through the Endocrine Society office.

Financial Disclosures of the Task Force

Laurence Katznelson, MD, Chair - Financial or Business/ Organizational Interests: Novartis, Roche, Pfizer; Significant Financial Interest or Leadership Position: none declared.

Edward R. Laws, Jr, MD, FACS - Financial or Business/Organizational Interests: none declared; Significant Financial Interest or Leadership Position: none declared.

Shlomo Melmed, MD - Financial or Business/Organizational Interests: none declared; Significant Financial Interest or Leadership Position: Novartis, Roche, Pfizer, Ipsen.

Mark E. Molitch, MD - Financial or Business/Organizational Interests: Novartis, Pituitary Society; Significant Financial Interest or Leadership Position: Ipsen, Novartis, Genentech. Significant Financial Interest or Leadership Position: none declared.

M. Hassan Murad, MD* - Financial or Business/Organizational Interests: KER Unit (Mayo Clinic).

Andrea Utz, MD, PhD - Financial or Business/Organizational Interests: Novartis; Significant Financial Interest or Leadership Position: none declared.

John A. H. Wass, MA, MD, FRCP - Financial or Business/Organizational Interests: Pituitary Society; Significant Financial Interest or Leadership Position: none declared.

*Evidence-based reviews for this guideline were prepared under contract with the Endocrine Society.

Guideline Endorser(s)

European Society of Endocrinology - Medical Specialty Society

Guideline Status

This is the current release of the guideline.

This guideline meets NGC's 2013 (revised) inclusion criteria.

Guideline Availability

Electronic copies: Available from The Endocrine Society Web site .

Print copies: The Endocrine Society, 2055 L St, NW, Suite 600, Washington, DC 20036. E-mail: govt-prof@endocrine.org. Telephone: 202-971-3636.

Availability of Companion Documents

The following are available:

- Abu Dabrh AM, Mohammed K, Asi N, Farah WH, Wang Z, Farah MH, Prokop, LJ, Katznelson L, Murad MH. Surgical interventions and medical treatments in treatment-naïve patients with acromegaly: systematic review and meta-analysis. J Clin Endocrinol Metab. 2014 Nov; 99(11):4003-4014. Electronic copies: Available to subscribers from the Journal of Clinical Endocrinology & Metabolism Web site .
- Abu Dabrh AM, Asi N, Farah WH, Mohammed K, Wang Z, Farah MH, Prokop LJ, Katznelson L, Murad MH. Radiotherapy vs. radiosurgery in treating patients with acromegaly: systematic review and meta-analysis. Endocr Pract. 2015 Mar 18:1-33. [Epub ahead of

print]. Electronic copies: Available to subscribers from the Endocrine Practice Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on May 15, 2015. The information was verified by the guideline developer on June 16, 2015.

Copyright Statement

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